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## ORIGINAL DEPARTMENT.

### Communications.

#### ANATOMY

IN ITS RELATIONS TO

#### MEDICINE AND SURGERY.

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#### No. 30.

**OCULAR REGION—(concluded).**—The operation for cataract by solution, is founded upon the action of the aqueous humor, on the capsule of the lens. The capsule must be first divided, and its substance broken up, in order to allow this fluid to come in contact with it, and as only a definite amount can be removed by this humor, too much should not be attempted at a single operation, as all which remains unchanged may do harm by mechanical irritation of the iris. For this reason it would seem a good practice to shave off from the surface of the cataractous lens as much as may be deemed advisable, without displacing it in its totality from the niche in front of the vitreous body. The capsule being capable of resisting the solvent action of the aqueous humor, should not be separated beyond the simple opening, necessary to gain access to the substance of the lens. If this be observed it will curl up, receding to the circumference of the suspensory ligament. As the tendency of the cataractous lens is to advance toward the anterior chamber, the recumbent position is that best adapted for the operation of couching or solution. The removal of the crystalline body necessitates the employment of glasses,

the form of which will compensate for its loss. The close relation of the lens and iris will explain their frequent adherence, after inflammatory disease. The cataract of children is usually congenital, the pupil may be blocked up at birth by lymph, the result of hereditary syphilis, and produce blindness.

The localization of ocular deposits is a matter of no small difficulty, and only attained after considerable experience. Thus a spot may be referred to the lens, when it is a scrofulous or perhaps an encephaloid formation in the interior of the organ. Such are deep, and possess a color somewhat yellow. Encephaloid disease is very frequent in children, cataract not so, unless congenital. Scrofulous and malignant disease may be confounded. In the former, when ulceration of the tunica takes place, and the humors flow out, the eye collapses and sinks back into the orbit, but in the latter, red, exuberant granulations, covered with an offensive puriform matter, rapidly fill up the orbit.

There are several conditions of the eye, upon the exact nature of which, anatomy has not informed us. Among these we may enumerate *myopia*, or near-sightedness, *presbyopia* or far-sightedness, *muscae volitantes*, and inability to distinguish colors. The first two are alleged to be dependent on too great or too little convexity of the cornea. That such is occasionally the case admits of no doubt; but in the great majority of instances, no such deviation of form can be detected. It is however gratifying to know, that by a mechanism constructed upon well-known laws of optics, both defects can be compensated for in the use of the concave glass in the first, and the convex in the last variety.

The *muscæ volitantes* constitute a source of great mental distress to persons so affected. Strings of beads, attenuated filaments and air bubbles, constantly sailing in successive ranks across the field of vision; sometimes solid, at others broken. Most individuals regard such as sure precursors of some serious disease of the brain or eye. Mackenzie, who has written very ingeniously on this, as indeed all subjects connected with the organ of vision, regards the *muscæ* as shadows cast upon the retina by minute objects moving almost in contact with that membrane. They imply nothing serious, and are not at all incompatible with excellent sight, and immunity from all cerebral disorder. The inability to distinguish colors does not, in all probability, depend upon any peculiarity in the construction of the eye, but rather in that part of the brain which recognizes luminous impressions.

**ZYGOMATIC REGION.**—Having passed over the superficial anatomy of the face, we shall next turn to a region more deeply situated; the "*Zygomatic.*" It should be first examined upon the skull, when it will be seen to be not only deep but very irregular. The temporal fossa leads into it. The bony walls which are placed about it are, in front, the posterior surface of the superior maxillary; behind, the articular eminence of the glenoid cavity of the temporal bone, and the spinous process of the sphenoid; (if studied with the lower jaw in situ, we should add the condyle and neck of that bone;) on the inside the pterygoid process, and a small part of the great wing of the sphenoid bone; and externally the zygomatic arch. At the anterior portion of the inner wall two fissures communicate with this region, the *spheno-maxillary*, and *pterygo-maxillary*, by the former of which it communicates with the orbit. The angle of union between these two fissures form the *spheno-maxillary fossa*.

The most important foramina opening into the zygomatic space are the *rotundum* for the second branch of 5th pair of nerves commonly called the *superior maxillary*: the *pterygoid* foramen for the pterygoid nerve and artery:

the *spheno-palatine* by which it communicates with the nasal fossa; and the *foramen ovale* for the 3d branch of the 5th pair of nerves or the *inferior maxillary*.

Fig. 29.

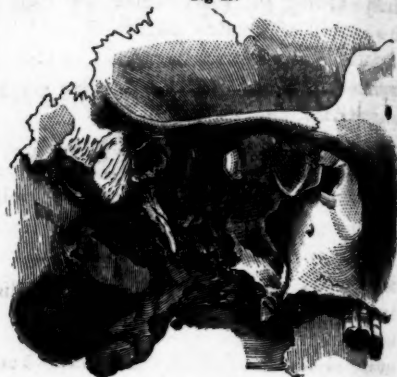


Fig. 29 Exhibits the bony walls, processes and fissures, of the Zygomatic region.

That a proper appreciation of the constituents of this region may be had, let us enumerate them briefly, as in a dissection conducted from without, inward.

With this view the masseter muscle and temporal fascia should be detached from the zygoma, the former thrown down and the latter up. The arch may be sawed away, when the coronoid process and the tendon of the temporal muscle attached to it will come into view. If the inferior maxillary be now divided at the symphysis, and drawn outward, or a vertical strip of the ramus cut out, removing the coronoid portion of the bone, and the insertion of the temporal muscle, and leaving a little column sufficient to support the condyle of the bone, the muscles of the region will be exposed, viz: the two *pterygoids*. The internal one arises from the inner face of the external pterygoid plate, and is inserted into the inner surface of the ramus and angle of the lower jaw. The external one, by two heads, from the ridge on the outer surface of the great wing of the sphenoid bone, and the external surface of the pterygoid process, and inserted into the neck of the condyle and the inter-articular cartilage. Between the internal pterygoid muscle and the jaw there passes the internal maxillary artery, which, leaving the external carotid, enters the region under con-

consideration behind the neck of the bone, advancing inward and upward, first between the two pterygoids, and next between the external one and the temporal muscle, and finally entering the pterygo-maxillary fissure. It is a vessel of greater magnitude than the temporal, and remarkable for its numerous branches, the most important of which are the *tympanic*, entering the glenoid fissure to supply the muscles and tympanic membrane of the ear; the *middle meningeal* which passes into the cranium through the foramen spinosum, to supply the meninges of the brain. The *inferior dental* descending to the posterior dental foramen, and traversing a canal in the bone, distributes branches to the roots of the teeth; several trunks to the muscles of mastication; *superior maxillary*, sometimes called *alveolar*, which enter the upper maxillary bone by several branches ("*posterior dental*") and supply the antrum, alveoli, molar and bicuspid teeth of the upper jaw; the *infra-orbital*, traversing the infra-orbital canal, sending branches to the antrum, anterior teeth, gums, etc., and emerging upon the face just below the orbit; the *posterior palatine*, which reaches the hard palate through the posterior palatine canal, and is expended upon the roof of the mouth, the gums, and palatal glands; and the last, the *spheno-palatine*, which enters the nose through the spheno-palatine foramen, and supplies the septum and lateral walls.

*Veins*.—Corresponding to these trunks are veins, which, by their communications, form a plexus situated between the external pterygoid and temporal muscles, and from which the internal maxillary vein originates, afterward emptying into, or rather joining, the temporal near the neck of the lower jaw, and in the substance of the parotid gland.

*Nerves*.—Very important nerves are situated in this region. The *superior maxillary* passes through the foramen rotundum, crosses the spheno-maxillary fossa to the infra-orbital canal, and distributes, while in the fossa, a branch "*orbital*," which enters the orbit through the spheno-maxillary fissure, and divides into a temporal and malar filament, the first of which, through an opening in the

malar, enters the temporal region, and at last piercing the temporal fascia just above the zygoma, supplies the integument over the forehead and temple. The malar branch leaves the orbit through another foramen in the malar bone, and supplies the integument over the cheek. The nerve next gives off two branches, which are called *spheno-palatine*, and which descend to communicate with *Meckel's ganglion*, a little body in the spheno-maxillary fossa, just below the nerve we are describing; and lastly, two branches, the *posterior dental*, which enter the upper jaw through small foramina, on its tuberosity or zygomatic surface. These are all filaments of common sensation.

The inferior maxillary is seen to enter the zygomatic fossa through the foramen ovale behind the pterygoideus externus muscle, at which place it separates into two considerable trunks, an *anterior* and *posterior*. The anterior is a motor nerve, and divides into five branches, corresponding to the five muscles of mastication to which they are distributed, taking the names of *temporal*, *masseteric*, *buccal*, *pterygoids*. The *posterior trunk* detaches two branches, which meet again to form the *auriculo-temporal* nerve, the course of which is under the pterygoideus externus muscle to the inner surface of the temporo-maxillary articulation; thence it joins itself to the temporal artery, close to the cartilage of the ear, and finally ends by splitting into an anterior and posterior temporal branch, supplying the integument of the temple, the muscles, and pinna of the ear. This nerve communicates by one or two filaments, which wind round the neck of the lower jaw, with the facial at the posterior border of the masseter muscle, and among other branches supply the articulation of the jaw. Between its two roots of origin the middle meningeal artery passes. The inferior maxillary next gives off the *gustatory nerve*. It is placed beneath the external pterygoid muscle on the inner side of another considerable nerve, the inferior dental. Here it is also joined by a very delicate filament, which comes out of the glenoid fissure, the "*chorda tympani*;" the nerve next passes between the

ramus of the jaw and the pterygoideus internus muscle, afterwards somewhat parallel with the body of the jaw, to the tongue, where we shall, at another time, more particularly notice its relations.

The *inferior dental* proceeds from the inferior maxillary, where the latter is placed beneath the external pterygoid muscle, then descends between that muscle the internal ligament and ramus of the jaw to the posterior dental foramen into which it enters in company with the inferior dental nerve, and at which situation it gives off a little branch the mylo-hyoid. In addition to the above, there exists considerable fat and cellular tissue in this region, and which through the spheno-maxillary fissure communicate freely with like tissues in the orbit.

As the articulation of the lower jaw is in close juxtaposition with the zygomatic region, I shall treat of it here as one of the constituents of this space.

Fig. 30.



Fig. 30 represents the most important constituents of the zygomatic region, as they are related to each other. Most of the ramus of the inferior maxillary is cut away, and the two pterygoideus are seen divided. 1. Three branches of the 5th pair, at the petrous portion of the temporal bone. 2. The superior maxillary nerve. 3. The inferior maxillary nerve. 4. The auriculo-temporal nerve. 5. The gustatory nerve. 6. The facial coming out of the stylo-mastoid foramen, and afterward cut off. 7. Inferior dental nerve. 8. Filament of communication between the 5th and the facial nerves. 9. The internal maxillary artery.

The socket for the inferior maxillary condyle is placed in the temporal, and is guarded in front by the eminentia articularis, behind by the middle root of the temporal zygomatic process, on the outside by the

zygomatic tubercle, and on the inside by the spinous process of the sphenoid bone. Behind the articular cavity is the glenoid or Glaserian fissure, the auditory and vaginal processes. It is transversely ovoidal, larger than the head of the bone intended to occupy it. Between the articular surfaces a cup shaped inter-articular cartilage is placed, which is connected to the tendon of the pterygoideus externus muscle. This cartilage has sometimes a perforation in its centre, at other times not, which fact determines the presence of two or one synovial membranes.

The ligaments connecting the articulating bones are the *capsular*, rather imperfect, and which arising from the margin of the glenoid cavity is attached to the neck of the condyle: the *internal lateral*, from the spinous process of the sphenoid to the margin of the posterior dental foramen: the *external lateral*, from the zygomatic tubercle to the outer and posterior portion of the neck of the condyle.

**Practical Remarks.**—The orbit communicating with the zygomatic fossa through the spheno-maxillary fissure, and by the fat and cellular tissue of the parts, disease in one region may rapidly propagate itself to the other. Various deviations of the eye may follow in this way from the exposure of the orbital nerves to pressure. Through the spheno-palatine foramen the nasal fossa and this region communicate, rendering similar morbid extensions as in the other case liable to occur. Disease in the zygomatic region may produce diminution in the sensibility of the upper part of the face, or extreme neuralgia by pressure upon the superior maxillary nerve which crosses it; rigidity or paralysis of the muscles of mastication from pressure on the motor part of the 5th pair; impairment of the taste or sensibility of the tongue, from injury to the gustatory nerve; painful state of the teeth, antrum, gums, &c., by pressure upon the dental trunks of the upper maxillary, or the inferior dental trunk of the inferior maxillary nerve. The posterior surface of the superior jaw being placed in front of the zygomatic region, tumors might very readily, by the absorption of the bone, pass into the as-



trum, or from the antrum, into the region under examination. So too the temporal region being continued into the zygomatic, their affections may come to occupy both, especially if beneath the temporal muscle. In neuralgia of the upper part of the face, the division of the superior maxillary nerve has grown into favor among surgeons. To be successful, the section must be made behind its branches. This will require that the nerve should be attacked at the posterior part of the sphenomaxillary fossa, where it emerges from the foramen rotundum. An inspection of the skull, or of Figs. 29 and 30, will show that this point can be most safely reached by following back the infra-orbital canal which opens upon the face below the orbit, and which lodges this nerve. The whole antero-posterior extent of the upper maxillary must be traversed, which is readily accomplished by the application of the trephine to the front wall, and another to the back wall, or by a few taps of a punch to the latter, and then picking out the fragments with the forceps. In this operation the antrum maxillare is passed through.

A similar operation may be done upon the inferior dental nerve when the suffering is confined to parts over the lower jaw. This nerve enters the jaw through the posterior dental foramen, which is situated on the inside of the ramus a short distance above the angles, and will be most easily reached, by splitting the integument and masseter muscle over the external surface of the inferior maxillary where its body and ramus unite, cutting through its external wall with a trephine, and exposing the nerve as it enters the dental canal. It is accompanied with the inferior dental artery from which the hemorrhage is usually profuse, requiring plugging, or as I have used in a case not long since the actual cautery. If the object should be to divide the inferior maxillary behind all its branches, its division would have to be effected at the foramen ovale. Take a skull and place the inferior maxillary in its articulating cavities, and it would seem that the safest method of reaching this deeply placed opening would be over

the concavity between the coronoid and condyloid processes of the lower jaw by dividing the posterior tendinous fibres of the temporal muscle. The foramen ovale is placed in a notch between the pterygoid and spinous processes of the sphenoid bone, and is a little anterior to and deeper than the extreme termination of the eminentia articularis of the inferior maxillary socket. These points will answer as reliable guides in finding the nerve in this situation. As both the motor and sensory root of the 5th pair are together here, we should say that the only certain evidence of its division would be the loss of power over the muscles of mastication on that side. In all these operations, free bleeding may be expected, from injury to some of the branches of the internal maxillary artery; and therefore the more free the external incisions are the better, as it facilitates the securing such trunks as require ligation. As the 5th pair of nerves communicates with the facial, and as some of these fibres of communication are probably motor, a division of the trunk of the facial posterior to the connexion may not necessarily be followed by facial paralysis.

Punctured wounds of the zygomatic region are serious, in consequence of the injury likely to be inflicted on some of the many vessels or nerves situated in it.

In the removal of an upper maxillary, the whole front of the zygomatic region is exposed, and as the internal maxillary artery is quite close to its posterior surface, the propriety of twisting it from its palatine and pterygoid attachment, rather than employing the knife, will be evident.

A moment's glance at the glenoid cavity will show us that a luxation of the lower jaw can only occur in one direction, *forward*. When the jaw is depressed, as in opening the mouth, the condyles advance toward and even upon the articular eminences. Should there now be a blow received upon the chin, or from any cause a sudden contraction of the external pterygoid muscles take place, those muscles being placed at nearly right angles with the rami of the bone, the condyles will be dragged over the eminences, and be drawn into the

zygomatic or even temporal fossa by the temporal muscles. In this displacement the other muscles of mastication must not be excluded from a participation, as the anterior fibres of the masseters, internal pterygoid and temporals, all co-operate in bringing about the result. The condyles may be placed upon the articular eminences, and there remain. This is an incomplete luxation. If the reader will examine again the skull with lower jaw attached, he will find that the arches of the two jaws correspond. If now the condyles be slipped out of their sockets, and placed front, within the zygomatic arch, the dental arch of the inferior will advance beyond that of the superior jaw, and if the muscles were attached, the mouth would be opened by the action of the digastric muscles, and the posterior fibres of the masseter muscles. Again, between the tubercle of the zygomatic and the external auditory meatus, a hollow will be seen, occasioned by the vacuation of the glenoid cavities. Here, then, are three most unmistakable signs of a complete luxation of both condyles of the lower jaw—an advance of the dental arch, depression of the chin, and a hollow in front of the ear. In the partial luxation, the jaw is slightly advanced, teeth a little separated, hollow in front of the ear. To test these signs, place the condyles on the articular eminences; let one condyle be next slipped out of its socket, and there is presented the last variety of these luxations, in which it will be seen that the jaw is carried over to the sound side and the hollow in front of the ear of the affected side. A little further practice with the skull and jaw, remembering the muscular attachments already given, will demonstrate the method necessary for reduction. The condyles are in the zygomatic fossae, held there by the temporals, masseters, and internal pterygoids, and pressed against the front of the articular eminences. The first indication is to depress the condyles, so as to bring them on a level with or below these eminences. This is usually by the thumbs acting on the posterior molar teeth. If now the chin be elevated by the fingers, the fibres of the masseters which run from the zygoma forward, and the poste-

rior fasciculi of the temporals will drag the condyles into their proper functional position.

The articular eminences in some persons are very low, so that every time the mouth is opened and shut the condyles mount upon their summits and again fall back. This will explain the unpleasant sound which some individuals make when eating. I have known of persons thus constituted subjected to prolonged blistering under the impression that the noise was due to a synovitis. I had a skull in my possession at one time, in which the eminence on one side was actually worn away, and evidently occasioned by such a malposition of the teeth as in eating to drag the condyle strongly against it. Congenital deficiencies in the height of the articular eminences, or relaxation of the muscles of mastication, may predispose to luxation. It may occur in extremely nervous females, and I recollect very well a case which occurred in consequence of great muscular relaxation, the result of profound intoxication.

In the removal of the lower jaw, it will be evident, from the structures described, that the chief difficulties will be such as result from the anatomical relations of the rami. The masseters, the temporals and pterygoid muscles, would have to be detached from their maxillary attachments. The last, or pterygoid muscles, should be divided after the bone is disarticulated. The internal maxillary being placed in close contact with the neck of the bone, and the carotid artery, of which it is a branch, being situated behind the posterior border of the ramus, are in danger. Hence, in the early operations of this kind, it was deemed necessary to first ligate the carotid. By prying or pulling the bone forward and twisting the ramus outward, after the division of its symphysis, and shaving close to its surface, it may be so far removed from these trunks as to leave them completely out of the way of harm.

The glenoid cavities of the temporal bone constitute a very important point in the studies of the comparative anatomist and ethnologist. In animals whose habits of life render it necessary to tear their food or gnaw, as the

carnivora and rodentia, these cavities are deep, narrow, and of considerable transverse extent, allowing only of depression and elevation, and productive of great firmness. In the graminivorous mammals, the sockets are considerable larger than the condyles of the inferior maxillary, and somewhat ovoidal in form, admitting of considerable lateral movement, such as is necessary in grinding or crushing their food. In man, whose glenoid sockets present an intermediate shape, we have an argument for the omnivorous nature of his food.

Several practical points of interest result from the relation of the condyles of the lower jaw to the auditory canal, and which have been pointed out in a former communication.

### A Description of a Craniotome for Post-Mortem Examinations.

By THEODORE A. DEMMÉ, M. D.,

Demonstrator of Anatomy, Pennsylvania Medical College.

During the course of last winter I introduced in the anatomical rooms under my care, the use of the Craniotome, an instrument designed to facilitate the removal of the calvaria.

In post-mortem examinations of the brain, whether made in private practice or in the dissecting halls, there is often so much difficulty and inconvenience encountered, that any contrivance, designed to lessen and expedite the labor, is worthy of consideration.

In the *London Lancet*, (Feb. 1859, Amer. Ed.), a description of an instrument, the Craniotome, designed to facilitate the operation, is given by Edmund Lund. It consists of a steel ring or band, about a quarter of an inch in thickness and five-eighths of an inch in width, of an oval, or rather ovoid figure, measuring inside eight inches and a half in the long diameter, and about six inches in the greatest transverse diameter. It has passing over it, in the direction of its long diameter, a curved bar, which serves as a handle when the ring is placed around the head. The whole is retained in position by means of four screws. Each of the screws is about an inch and three quarters in length, with the point rounded off, and made at the end like the rose of a dentist's drill, so that in screwing it down against the

bone of the skull, it penetrates just far enough to keep the ring steady, without presenting any really sharp angles or joints by which the fingers might be accidentally injured in holding the instrument.

The great advantage gained by the use of this instrument is, that during the section of the skull, the head can be held firmly or turned in any direction.

This instrument was in constant use during last winter in the anatomical rooms of Pennsylvania College, and afforded great satisfaction, not, however, as a craniotome, but as a cranium holder.

In consequence of the ring which encircles the head, the section must be made perfectly straight, parallel to the ring. This section, though always made in the dissecting room, is improper in post-mortem examinations in private practice, inasmuch as the calvaria, however carefully readjusted and covered by the scalp, will be easily displaced, causing a shocking disfigurement of the forehead. To obviate this, the brain may be exposed by sawing, in the first place, from before backward, in the direction of the long axis of the skull to a short distance above the root of the pinna of the ear, and then from behind forwards, from the occipital protuberance to the termination of the first line. An angular piece is thus removed, which, when replaced and covered by the pericranium, is not easily dislocated.

As the craniotome of Lund cannot be used when this section is desirable, and as, moreover, it is a rather complex and expensive instrument, I have so simplified it, as to enable me to hold the head firmly, and yet to make any section that may be desirable.



The instrument as modified is so simple in construction, that the accompanying figure,

serves to explain it almost without any description.

A bar of highly tempered steel is curved so as to resemble somewhat, the letter U: at each extremity are two screws, by means of which the bar is fastened to the scull; a number of holes are drilled through each extremity, by means of which the screws can be moved at a greater or less distance from each other.

In applying the instrument it is placed transversely across the head, the legs resting upon the lower portions of the parietal and upon the squamous portions of the temporal bones; the screws by means of the key, *figure*, are forced upon the bone, firmly securing the instrument. However slippery the scull, denuded of its pericranium may be, however convex the form of the cranium, the operator is yet enabled, whilst holding the head, to carry the saw in any direction, to a sufficient depth in those parts where the bone is thickest. and in other places, so lightly, as not to injure the brain or its membranes.

#### Duration of Gestation in a Medico-Legal Point of View.

By B. L. DODD, M. D.,  
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There is very little certainty regarding the precise duration of gestation in the human female. Fortunately, however, cases are quite rare, in which the legitimacy of a child is to be determined by the period of gestation. Yet, when such cases occur, they must, from the very nature of the case, cause great embarrassment to the medical witness. In view of this, it is very important that we should possess accurate data of all the facts derived from analogy or otherwise, bearing upon the subject.

To fix the "legal limit" of gestation is no easy task. In France 300 days are allowed. Dr. Simpson of Edinburgh uses the following language: "I believe our best criterion for fixing the 'legal limit,' or ultimate possible

period of gestation in the human female, will be derived from careful and repeated observations upon the ultimate period of gestation in the cow; allowing always for the difference of four or five days of excess in the normal period of pregnancy in the cow, as compared with the human mother."

Acting upon this suggestion, I have collected the subjoined carefully recorded observations of the periods of gestation in 66 cases, of 13 cows, extending over a period of thirteen years.

#### *Time of Gestation of Mr. J. R. Burnd's Cows—1844 to 1859.*

##### 1. Dolly—

1846, 284 days, heifer.  
1847, 288 " bull.  
1848, 282 " heifer.  
1849, 296 " bull.

Sold.

##### 2. Molly—

1844, 285 days,  
1845, 285 " bull.  
1846, 291 " "  
1847, 291 " heifer.

Sold.

##### 3. Suky—

1844, 288 days, heifer.  
1845, 276 " "  
1846, 285 " bull.  
1847, 280 " "

Sold.

##### 4. Lilly—

1844, 287 days, heifer.  
1845, 285 " no sex given.  
1846, 284 " heifer.  
1847, 288 " bull.  
1848, 293 " heifer.  
1849, 295 " bull.  
1850, 290 " "  
1851, 288 " "  
1852, 292 " heifer.

Last calf at 13 years old.



## 5. Jenny, large brindle cow—

1st calf at 3 years old, 1847, 281 days, bull.	
2d " 4 " 1848, 281 " "	
3d " 5 " 1849, 286 " "	
4th " 6 " 1850, 283 " heifer.	
5th " 7 " 1851, 287 " bull.	
6th " 8 " 1852, 282 " heifer.	
7th " 9 " 1853, 284 " "	
8th " 10 " 1854, 284 " "	
9th " 11 " 1855, 288 " bull.	
10th " 12 " 1856, 289 " "	
11th " 13 " 1857, 282 " "	

Butchered. This cow is daughter of No. 4, Lilly.

## 6. Sally—white cow—

1st calf at 3 years old, 1848, 284 days, bull.	
2d " 4 " 1849, 290 " "	
3d " 5 " 1850, 292 " heifer.	
4th " 6 " 1851, unknown, bull.	
5th " 7 " 1852, 278 days, "	
6th " 8 " 1853, 279 " heifer.	
7th " 9 " 1854, 276 " bull.	
8th " 10 " 1855, 279 " heifer.	

The following Spring, this cow died, before calving. Is daughter of Suky, No. 3.

## 7. Polly, out of Molly, No. 2,—a mischievous black cow—

1st calf at 3 years old, 1850, unknown, bull.	
2d " 4 " 1851, 286 days, "	
3d " 5 " 1852, 280 " heifer.	
4th " 7 " 1854, 283 " bull.	
5th " 8 " 1855, 290 " "	

Butchered.

## 8. White-face, out of Dolly, No. 1—

1st calf at 2 years old, 1850, 288 days, heifer.	
2d " 3 " 1851, 277 " "	
3d " 4 " 1852, 293 " bull.	
4th " 5 " 1853, 282 " "	
5th " 6 " 1854, 284 " "	

Sold.

## 9. Rose, brindle, born in 1851, from White-face, No. 8—

1st calf at 3 years old, 1854, 282 days, bull.	
2d " 4 " 1855, 276 " heifer.	
3d " 5 " 1856, 281 " "	
4th " 6 " 1857, 284 " "	
5th " 7 " 1858, 276 " bull.	
6th " 8 " 1859, 287 " "	

## 10. Cherry, lean, red cow, 1853, from Sally, No. 6—

1st calf at 2 years old, 1855, 274 days, heifer.	
2d " 4 " 1857, 279 " bull.	
3d " 5 " 1858, 273 " heifer.	
4th " 6 " 1859, 279 " bull.	

## 11. Suky, yellow, 1855, from Sally, No. 6—

1st calf at 2 years old, 1857, 275 days, heifer.	
2d " 3 " 1858, 279 " lost.	
3d " 4 " 1859, 281 " bull.	

## 12. Whiteface, from Rose, No. 9, 1854—

1st calf at 3 years old, 1859, 285 days, heifer.

## 13. Sophy—mischievous red cow, bought at a vendue, at 4 years old, in 1856. Time with first 2 or 3 calves unknown.

4th calf, at 7 years old, 1859, 275 days, bull.

The time of gestation in 66 cases, varies from—

273 to 293 days with a heifer calf;  
276 to 296 days, with a bull calf.

From these tables it will be perceived that nothing like uniformity exists; the difference between the shortest and longest periods being twenty days, while at the same time it will be observed, that there is considerable difference in the same individuals at different gestations; this amounts, in No. 5, to 14 days. These tables also show that, contrary to the popular opinion, the age of a cow has very little, if anything, to do with the length of the period of gestation, but that this depends rather upon the idiosyncrasy of the animal; some yielding a higher average, and some a lower. Another fact, deducible from these observations, is that the average length of gestation is longer by three days in bull calves, than in heifers.

The French law puts the legal limit of gestation at 300 days. If we take Simpson's position, deducting an excess of four days, the present tables would bring the legal limit in the human female to 293-4 days. I shall continue these researches, and they will in due time be recorded.

## OBSTETRICAL REPORT OF ONE HUNDRED CASES.

By B. L. DODD, M. D., of Newark, N. J.

Continued from the Report of 1859.\*

No. of case.	Nativity of Mother.	No. of Pregnancy.	Age.	Presentation.	Position and Variety.	Hours in attendance.	Sex of Child.	Length of Cord.	Secondines.	Remarks.	Dead.	Living.
100	U. S.	3	24	Vertex	1st P. 1st V.	6 h.	M	29 in	6 min.			L
101	Ireland	13	38	do	1	1½ h.	M	40	15 "			L
102	do	2	30	do	2	4½ h.	F	32½	3 "	R D		L
103	do	6	26	do	1	6½ h.	F	32½	1 "			L
104	U. S.	1	26	do	1	3 h. 20 m	M	33	1 "			L
105	do	1	...	Breech	2	3½ h.	M					L
106	Ireland	4	27	Vertex	1	4½ h.	F	25½	3 min.			L
107	do	1	22	do	2	8 h. 50 m.	F	19½	5 "			L
108	England	7	26	do	1	35 m.	F	26½	9 "			L
109	Ireland	1	23	do			F	20	5 "			L
110	do	1	24	do	1	2½ h.	M	26½	3 "	R		L
111	do	4	24	do	1	8½ h.	M	28	5 "			L
112	do	3	24				M	18				L
113	do	8	32	Vertex		1 h.	F	20		R D		L
114	U. S.	1	38	do	1	42 h.	M	19½	1 min.			L
115	England	4	33	do	1	2½ h.	F	29½	3 "	R D		L
116	U. S.	1	23	Breech	2	1 h.	M	18½	3 "	R		L
117	do	2	16½	Vertex	1	1 h.	F	28	5 "			L
118	Scotland	2	30	do	1	1½ h.	M	28½	3			L
119	do	6	33	do	1	2 h.	M	16		R D		L
120	U. S.	3	28	do	1	3½ h.	M	27½	3 "	R		L
121	Ireland	5	35	do	1	1 h.	F	24½	3 "			L
122	U. S.	3	29	do			F	26	3 "			L
123	Ireland	11	36	do	1	1½ h.	F					L
124	do	2	30	do	1	9 h.	M	25		R D		L
125	U. S.	3	33	do	1	5 h. 30 m.	F	30½	3 min.	R		L
126	England	1	32	do	1	5 m.	M	22	5 "	R		L
127	Ireland	2	24	do	1	2½ h.	F	23½	5 "			L
128	U. S.	3	33	do	1	3 h.	F		3 "			L
129	Ireland	9	40	do	1	1½ h.	F	23	10 "			L
130	Scotland	8	45	do	1	2½ h.	F	27½	3 "			L
131	U. S.	2	21	do	1	10 m.	F	33½	15 "			L
132	do	7	34	do	1	3 h. 25 m.	M	38	15 "			L
133	do	2	Unknown			Born.	M	22				L
134	do	6	...	Vertex	2	3 h.	M					L
135	Ireland	3	24	do	1	1½ h.	M	34½	8 "			L
136	Canada	2	Unknown	do	1	5 m.	F	21	5 "			L
137	U. S.	2	20	do	1	1 h. 46 m.	F	24½	5 "			L
138	do	5	35	do	1	1 h. 40 m.	F	27½				L
139	Ireland	2	21	do	1	2 h.	F	27½	5 "			L
140	U. S.	2	...	do	1	4 h.	M					L
141	do	1	22	do	1	2 h. 40 m.	F	21½	6 "			L

\* The report of the first hundred cases was published in the Transactions of the Medical Society of New Jersey for 1859.—Eds.

No. of case.	Nativity of Mother.	No. of Pregnancy.	Age.	Presentation.	Position and Variety.	Hours in attendance.	Sex of Child.	Length of Cord.	Secundines.	Remarks.	Dead.	Living.
142	Ireland	1	42	Vertex	1st P. 1st V.	2 h.	M	29½	5 "			L
143	England	3	35			Just born on arrival.	M	23	15 "			L
144	U. S.	4	27	Vertex			F	28	20 "			L
145	do	2	25	do	1 1	45 m.	F	20½	3 "			L
146	do	1	26	do	1 1	½ h.	F	21	7 "			L
147	Ireland	1	22	do	1 1	4 h.	F	22½	5 "			L
148	U. S.	1	23	do	1 1	4 h.	F	19½	3 "			L
149	do	5	35	do	1 1	9½ h.	M	31½	2 "			L
150	France	11 & 12	34	{ do	1 1	2 h. 40 m.	F	24½	5 "	R	L	L
				{ do	2 3	3 h.	F	23½				
151	U. S.	1	31	Breech	2 1	6 h.	F	36				L
152	Ireland	2	30	Vertex	1 1	1 h. 6 m.	M	20½	3 "			L
153	England	3	30	do	1 1	4 h.	M	28½	5 "			L
154	do	3	27	do	1 1	1 h. 10 m.	M	22½	3 "			L
155	Ireland	7	30	do	1 1	1 h. 35 m.	M	22½	1 "			L
156	U. S.	2	24	do	1 1	5 h. 45 m.	M		3 "			L
157	Ireland	4	29	do	1 1	3½ h.	F	26½	3 "			L
158	do	9	38				M					L
159	U. S.	2	31	Vertex	1 1	1½ h.	M	30	2 "			L
160	do	2	31	do	1 1	½ h.	F	23½	4 "			L
161	do	1	24	do	1 1	3½ h.	M	26½	4 "			L
162	do	1	23	do	1 1	11 h. 50 m.	F	26½	5 "			L
163	Ireland	4	33	do	1 1	1½ h.	M		7 "			L
164	England	5	29	do	1 1	½ h.	F	28½	7 "			L
165	U. S.	4	29	do	1 1	3½ h.	M			D	L	L
166	do	3	34	do	1 1	4½ h.	M	29½	3 "			
167	do	2	38	do	1 1	2½ h.	M	21	5 "			L
168	England	7	33	do			M	30½	5 "			L
169	U. S.	1	23	do	1 1	6 h. 10 m.	M	24	3 "			L
170	Ireland	13	40	do			M	22	3 "			L
171	do	2	27	do			M	36½	3 "			L
172	England	2	22	do	2 1	1 h. 50 m.	M	26½	8 "			L
173	U. S.	...	...	do			M					L
174	Canada	8	30	do	1 1	5 m.	F	25½	5 "			L
175	U. S.	1	...	Breech	2 1	3 days.	F					L
176	England	8	34	Vertex	1 1	2 h. 5 m.	M	33	5 "			L
177	U. S.	1	19	do	1 1	3 h.	M	31½	4 "			L
178	Germany	1	22	do	1 1	15 h. 50 m.	M	28½	6 "			L
179	U. S.	4	30	do	1 1	20 m.	F	31	5 "			L
180	do	3	25	do	1 1	3 h. 55 m.	F	39½	5 "			L
181	Germany	1	30	do	1 1	5½ h.	F	20½		D	L	L
182	U. S.	2	...			2½ h.	M					
183	do	2	28	Vertex			F	24½	5 "			L
184	do	2	...	do	1 1	1 h. 20 m.	M	20½	5 "			L
185	England	4	29	do	2 3	52 h.	F	37	5 "			L
186	U. S.	1	28	do	1 1	2 h. 40 m.	M	34	3 "			L
187	England	1	21	do	1 1	2 h. 45 m.	F	21½	3 "			L
188	England	10	42	do	1 1	1 h. 5 m.	F	26	3 "			L
189	U. S.	3	26	Face	1 1	50 m.	F	26½	5 "	R	L	L
190	Ireland	3	27	Vertex	1 1	½ h.	M	41½	3 "			

No. of case.	Nativity of Mother.	No. of Pregnancy.	Age.	Presentation.	Position and Variety.	Hours in attendance.	Sex of child.	Length of Cord.	Secondaries.	Remarks.	Dead.	Living.
191	U. S.	1	...	Vertex	1st P. 1st V.	7 h.	M	25	2 "			
192	England	2	19	do	1 1	50 m.	M	19	3 "	R		
193	U. S.	4	26	do	1 1	4½h.	F	24	2 "			
194	England	5	30	do			M	27½	3 "			
195	do	1	...				M	18				
196	Ireland	6	27	Vertex	1 1	1½h.	M	39½				
197	England	4	24	do	1 1	6 h. 25 m.	M	25	5 "			
198	do	3	28	do	1 1	1 h.	F	20½	5 "			
199	Ireland	1	25	do	1 1	4½h.	M	30	3 "			
200	U. S.	4	25	do	1 1	3 h.	F	31½	5 "			

The average length of the umbilical cord in the 89 cases, reported this year, is - - 26.665 inches.  
Ditto. in 73 cases last year, - 23.859 "

The average length in 162 cases, is - - - - - 25.4 "

97 out of 102 children born were vertex presentations.

There was one case of twins—both vertex presentations.

There was one face presentation.

There were four breech presentations, all in primiparous cases.

There were 75 positions of first position, first variety, *i. e.* left occipito iliac anterior.

There were 4 positions of second position, first variety, right occipito iliac anterior.

All the breech cases were of the latter position.

There were three cases of the second position, third variety, right occipito iliac posterior.

There was one case of first position, third variety, left occipito iliac posterior.

There were fifteen cases where presentation and position were not determined, owing to the child being born before my arrival, or premature.

The shortest umbilical cord this year measured 16 inches; and the longest 41½ inches.

*Remarks.*—Case 102. Mrs. H. Met Dr. E. A. Osborne in consultation, who had been

in attendance since 8 o'clock the evening previous, the woman having been in labor most of the day, with midwife officiating. There was prolapsus of the cord, of which the pulsation had ceased before my arrival; os uteri dilated; pain had been severe, but toward morning slackened; presentation vertex, 2d position, 1st variety. Concluded to apply forceps, but the descent was slow and difficult. At the end of about an hour, the patient having become cold and exhausted, we removed the forceps, and immediately afterwards the patient went into a convulsion which lasted several minutes, whereupon we re-applied the forceps, and by using much force effected delivery at 7½ o'clock; no return of convulsion. There was perfect inability to move the limbs for several days afterwards, and paralysis of the bladder.

Case 110. Mrs. R. Child had a double hare lip, involving the entire hard palate.

Case 113. Mrs. L. Presentation was vertex with both hands—position not fixed—a fetus of five months.

Case 115. Mrs. S. Called at 8½ A. M. Membranes ruptured, and cord prolapsed and pulseless. About midnight, the child being dead, and the mother impatient, applied for forceps, and delivered in ten or 15 minutes.

Case 116. Miss P. Called at 7½ A. M.; had been in labor since 3 A. M.; pains severe. Presentation breech, pos. right, sacro-iliac—anterior. The face of the child in correspondence with the anterior abdominal wall of the mother; the right buttock turned a little to the



left; penis of the child was directed towards the symphysis pubis, a little to the left. As the breech descended, the right hip became more and more anterior, until at the time of emergence, it stood right sacro iliac transverse. The right, or anterior hip emerged first, the other immediately following. As the case proceeded, the anterior plane of the child became more and more directed toward the left side of the mother, so that when the shoulders passed out, the right arm of the child was directed to the left groin of the mother; the face turned into the hollow of the sacrum from right to left. Some delay in the delivery of the head. Child living.

Case 119. Mrs. P. had considerable anasarca—was affected some days after confinement with puerperal mania, or perhaps hysteria, simulating it; also a bad cough.

Case 120. Mrs. W. Presentation vertex, 1st position, 3d variety. Descent pretty easy, until the vertex reached the perineum, when the resistance was considerable. Fæces discharged, and delay greater than in former labors. The face passed beneath the right ramus of the pubis, a little to the right of the symphysis.

Case 124. Mrs. L. Summoned at 6½ P. M. Had been in labor nearly all day, with midwife in attendance; os nearly dilated; membranes ruptured, with cord prolapsed and pulseless. Birth, 3¼ o'clock. Child dead.

Case 125. Mrs. D. Summoned at 11 P. M. Had had slight pains for two days previous. Pains moderate till 4 A. M.—when I found there had been a slight descent, the soft parts well dilated. She complained bitterly of pain, and begged for chloroform. After much entreaty gave her about 3ij with very happy effect in lessening sensibility and facilitating descent; labor being completed in about 30 minutes. I rarely witnessed so rapid progress. Dr. Coles attended Mrs. D. in her previous confinement, and noticed how speedily the labor was completed after administering chloroform.

Case 126. Mrs. R. S., native of England, residing in Newark, aged 32, carrying her first child, was seized on Friday evening, January

14th, with convulsions, and I was sent for. I had seen her two or three weeks before, and had directed some means designed to relieve pains in the head, epigastrium, and lower limbs, of which she complained; also a troublesome sickness of the stomach, and a sense of weakness. She was, however, able to prosecute her business which was sketching on glass. The next evening, (Jan. 15th,) she had another paroxysm; coming on suddenly, while she was sitting in a chair, and falling to the floor, one foot unperceived, lay for some moments in contact with the stove, and was severely burned. From the 15th to 25th, she had no further paroxysms, but acted strangely. From the 6th to 11th of February she had numerous paroxysms, very violent and marked by all the characteristic signs of eclampsia and epilepy, such as the suddenness of the seizure, entire loss of consciousness, violently contorted features, becoming purplish and congested; bitten tongue; foaming at the mouth, stupor and sleep. From this time to the 24th. Feb. 7th she had one or more paroxysms every day, and during the intervals was affected with delirium, simulating somewhat delirium tremens, having visual illusions, &c. On the 24th the paroxysms took place regularly every hour up to the time the child was born, which was on the 25th, about 24 hours afterwards. After the birth of the child full consciousness was not restored short of two weeks, though the convulsions ceased. The child weighed at birth 4½ lbs., being premature, a male of 6½ months foetal life, and lived 8 days. Large abscesses formed in the scalp of the mother, which were lanced and discharged copiously. Her sight and hearing were more or less affected for a considerable period; indeed the latter remains to this day somewhat impaired. The whole case certainly was remarkable. The convulsions, according to all appearances, were decidedly puerperal, and yet, it would seem at times, as if there were a hysterical element mixed up with the case. Considering the number of the paroxysms, their long continuance, and their great violence, it must be regarded as surprising, the mother did not sink under them

and that the infant was not only born alive, but that notwithstanding its immaturity, it survived eight days. With regard to treatment, it was less sanguinary than is usual in such cases; we having been led to infer from experience in other cases, that excessive blood letting was, to say the least, unnecessary; and being in the present instance restrained by the pale and bloodless look of the patient, which existed from the first, as well by the consideration that it was important to husband the strength. Leeches to the temples; blisters to the back of the neck, sinapized foot baths, cathartics, also chloroform, antispasmodics and narcotics were the chief remedies used.

Case 150. Madame B. Labor began about 8½ P. M., with a little hæmorrhage; os dilated but pains slight and head high up—presentation vertex, 1st position, 1st variety; at 12 pains became quite severe. Birth of first child at 2 o'clock, precisely. Second child, (presentation vertex, 3d position, 3d variety; born ten minutes after 2 o'clock. The mother besides having given birth to 12 living children, had had 5 miscarriages; all being girls.

Case 189. Mrs. G. Notified at 4 40 P. M.; had been in labor since 2 A. M.; os uteri fully dilated; membranes entire—presentation face. Position at first, 1st position, 2d variety, changing to 1st position, 1st variety. Labor advanced rapidly, chin emerged first, under the ramus of the right os pubis, and the rest of the face shortly after.

Case 192. Notified at 5 P. M., (pains during day,) membranes entire. Head in excavation—child born at 5 50 P. M. Mother said it was a seven months child, and appearances indicate the same—it lived.

## Illustrations of Hospital Practice.

### WILLS (OPHTHALMIC) HOSPITAL.

Service of DR. LYTTELL.

(Reported by Ch. E. Hackley, M. D.)

Wm. F.—*Traumatic Cataract* of the right eye, with adhesion of the iris to the capsule. The posterior needle operation was performed, the adhesion removed, and the lens (which was quite soft) fairly divided "in situ."

J. S.—This was an operation performed the second time, after an interval of six or seven weeks. The lens, in its central part, was too hard to admit of division without displacement; but parts of its anterior surface were pared away, so as to diminish its thickness and place it in a condition more favorable for absorption. Another operation will probably be required for the full accomplishment of this process.

P. G.—*Entropion of the lower lid of both eyes.*—In the right, a transverse excision was made by the scissors, of a portion of the skin and subjacent fibres of the orbicularis, near the tarsal margin; and at right angles to this another piece was removed, about half an inch in length, so that when the divided edges were drawn by sutures into apposition, the wound had the appearance of the letter T. The result was the complete removal of the irritation and deformity. In the left eye, a transverse excision of the skin was all that was deemed necessary.

Several operations for strabismus were performed on persons differing in age from two years to twenty, but, beyond their successful issue, presenting no features requiring particular notice.

L. P., U. S., æt. 67.—*Hard Cataract in the left eye,* and incipient cataract gradually increasing in the right eye. The health of the patient being good and circumstances favoring, it was determined to extract the lens from the left eye.

The operation was performed by Dr. Wm. Hunt, section of the cornea being made with Beer's knife, upward. The aqueous humor escaping after the section of the cornea, the iris did not come in contact with the knife. A needle was then introduced to divide the capsule, and slight pressure made on the ball of the eye from below, to force out the lens. As this was attended with some difficulty, a delicate hook was inserted through the corneal wound into the cataract extracted without the slightest injury to the iris or other structures. The pupil being allowed to contract some to keep the iris from the wound, the lid was gently closed and retained in position by means of the Donna Maria gauze and collodion. The operation having been performed secundum artem, it is hoped and expected that the results will be favorable.

Rebecca McC., aged 40, had always enjoyed the best of health until August, 1859, when she had a violent attack of general ophthalmia in the left eye, which lasted two weeks. When she applied at the hospital for admittance, all pain had vanished, but the sight was very much weakened. She remained in the house until December, not having experienced any benefit; during which time she had slight pains in the eye. About this time a protrusion of the vit-

me of the choroid made its appearance; soon general choroid staphyloma of the entire lower half of the globe was apparent; and about the end of December intense pain in the ball set in, and for two months she had no cessation of pain. The right eye commenced about this time to fail gradually, and latterly she had not been able to read, sew, or exercise it for any length of time. The staphyloma in the left eye was steadily increasing up to the time she applied to Dr. Morton for relief. All sight was gone, and occasional pains were experienced; there was also much deformity; and, in order to save, if possible, the right eye, which was sympathetically affected, Dr. Morton advised extirpation of the globe, which operation he performed June 14th. The four recti muscles were first divided, then the superior and inferior oblique, and with blunt, curved scissors the optic nerve cut across. There was very little hæmorrhage, and, on the twelfth day after the operation, she was discharged well.

The appendages of the eye which were allowed to remain, have formed a good stump upon which she can wear an artificial eye.

#### COLLEGE OF PHYSICIANS AND SURGEONS, NEW YORK.

Clinic of PROF. PARKER.—Conducted by PROF. PARKER.

JUNE 26TH, 1860.

**Remarkable Case of Dry Gangrene.**—This patient, gentlemen, is a young man, æt. 25, by occupation a carpenter, who, though of a good constitution and healthy parents, presents a somewhat anæmic and care-worn appearance, resulting from frequent attacks of intermittent fever, followed by typhoid fever, from which latter he had hardly recovered, when he became affected with what he terms "the new fashioned sore throat." From the history which he gives of it, it is presumed that it was diphtheritic in its character. He now presents himself to the clinic with the fingers and thumb of the left hand in a gangrenous condition, the mortification extending a short distance beyond the first phalanx in each finger. The patient is unable to ascribe the disease to any distinct cause, but declares that his hand has never felt perfectly natural since it was frost-bitten sometime last winter. No distinct disease manifested itself, however, until some seven or eight weeks ago, when he was seized with an acute pain in the palm of the hand, which gradually extended itself up the fore-arm. Upon the cessation of the pain, he noticed that the end of the index finger was beginning to grow black, while, at the same time, sensation and warmth disappeared. Not long afterward the remaining fingers and thumb became similarly affected.

Upon looking over the interesting history of this somewhat rare case, we meet with but little difficulty in forming our diagnosis. The case is one of dry gangrene. We see before us a somewhat spare, though otherwise seemingly healthy man, who has, for the greater part of the last two years, been leading the life of an invalid; having suffered from frequent attacks of fever and ague, and subsequently from typhoid fever. Again, he informs us that several times last winter he was exposed to severe cold, which probably produced frost-bite in the affected hand. Since that time he has never had a proper circulation in his fingers. That condition of things remained until some six or seven weeks ago, when a new set of symptoms occurred, resulting finally in the well marked gangrenous condition which we now see.

There are two forms of this affection: one which is dependent upon a deficient condition of the *capillaries* supplying the part, occurring at those points farthest removed from the centre of circulation. We have another form of the disease, which arises from a deficient condition of the *large vessels* supplying the part. It is very important that we should distinguish between these two forms; important in regard to prognosis, important in regard to practice. In old, debilitated or enfeebled people—in persons suffering from the effects of spurred rye—the capillaries are liable to partake of the general condition of the system; they become enfeebled, and seem to die from actual want of tonicity. In these cases of capillary enfeeblement, the terminations of the extremities are the parts which are most likely to become affected, and, as a general rule, the toes, and not the fingers, suffer from the disease. Again, we may have an inflammatory form of the disease, in which the capillaries are alone implicated, dependent, usually, upon some local cause.

The other form of this disease occurs in younger persons—in those who have been affected with acute disease; or it may have a traumatic origin. In these cases the action is quite different from that of the capillary form. Suppose, for instance, that from fever and ague, typhoid fever, or impaired action of some sort, an *arteritis* is set up, by which the arteries leading to the hand become blocked up; this will go on, gradually creeping up the arm, until the remainder of the main arterial tube is so completely blocked up that the circulation of the part has to be carried on mainly, if not entirely, by the anastomotic branches. This is what has occurred in this case, and as a consequence the fingers have died—the circulation in them has come to an end. The question now comes up, what will be the ultimate result of all this? It may be that this action of mortification and decay will extend till it reaches the point

where the obstruction exists; or it may be that, from enlargement of the anastomotic branches, a line of demarcation will be formed below the point of obstruction of the main arterial branch. In this case, although we find pulsation obliterated as high up as the axilla, only the ends of the fingers and that of the thumb are as yet involved in the destructive process, and the question suggests itself—can nothing be done in the way of an operation? I should say, decidedly. no. Suppose I should cut off the ends of these fingers, the disease, still remaining *above*, would almost certainly cause the mortification of the stumps. The true plan is to treat the arteritis itself, and patiently wait until a line of demarcation is so perfectly formed that there can be no doubt whatever that the process of death has ceased, and has no longer a tendency to spread. We are sometimes misled in these cases, and resort to amputation too early; but when the line of demarcation is well formed, and we are satisfied that there is no further disease above, we may then proceed at once to amputate, and if the patient's general condition is good, a cure will be accomplished.

It will be seen, then, that the treatment of these cases is eminently expectant. I should advise but little to what has already been done in this case, unless it be the application of a small blister along the track of the artery near the axilla, to check, if possible, the further spread of the disease in the main trunk.

*Epithelial Cancer.*—This patient is a man of about 40 years of age, who, with the exception of this warty-like growth upon the central portion of the lower lip, presents every appearance of excellent health.

It is chiefly in this form of cancer that something can be done in the way of treatment before condemning it at once to the knife. The internal use of the arsenical preparations has a most excellent effect upon this disease, frequently acting so favorably as to dissipate it entirely. I should recommend, therefore, this man to have four drops of Fowler's solution, given upon a full stomach twice a day for a short time, and afterwards to increase up to three times a day, and continue this for a month or two. We may also derive some benefit from the external use of arsenic in combination with calomel. The preparation usually employed consists of one part of arsenious acid to one hundred and ninety-nine of calomel. This forms the powder of Dupuytren, and is a favorite remedy in the Parisian hospital. This combination does not appear to act as an escharotic, but merely as an alternative to the diseased surface. It should be applied once a day, after the part has been moistened with warm water. By this course of treatment the disease may be eradicated in the

space of a month or two. If this should not take place, it would be advisable to remove it by the knife.

Several other cases were exhibited to the class, but none of sufficient interest to demand any extended notice.

GOTHAM.

## EDITORIAL DEPARTMENT.

### THE MEDICAL AND SURGICAL REPORTER.

PHILADELPHIA, SATURDAY, JULY 7, 1880.

#### REFORMS IN MEDICAL EDUCATION.

In discussing this subject we can very naturally divide it into three parts. First—regarding the student who is to be educated; secondly—the science in which he is to be educated; and thirdly—the teacher who is to educate him. In each of these points, our present system of medical education presents deficiencies, demands reforms, and to each apply the resolutions presented and adopted at the late session of the American Medical Association.

Regarding the first point—and to this our remarks to-day will be limited—fundamental questions are involved, and any reform to be brought about, must, from the very nature of the case, be radical. We know this word "radical" is disliked in many quarters, yet we can no better designate the changes which are to be brought about, and which have received the sanction of the American Medical Association, than by this term. They are radical! Why then not say so? They will, if carried out, lead ultimately to a complete and perfect change of the present system; we are performing not more than our duty, when we call this thing by its right name. Besides, in medicine, the term "radical" need not be looked upon as so very offensive. The history of medicine is but the history of the most radical changes; of all sciences, it is the least conservative, and the most progressive. Is it reasonable to expect medical education to become fossilized in old forms, when every day witnesses the evolution of a thousand new facts from their crasis into independent life?



it reasonable to expect coming generations to tread the same old beaten track, when the only progress that has ever been made, has been by striking new paths?

But to the point. Shall the admission of young men into the ranks of students of medicine be restricted? This is the practical question. We care not what may be said to the contrary, wise men may show us the printed charters of medical colleges to convict us of an error. We affirm boldly that there is no young man, who has got it into his head that he is destined to become a physician, however deficient his elementary knowledge, not to speak of general scientific and classic attainments, but will find some preceptor in good standing to take him into his office, and some college, called regular, in which he can matriculate and from which he can obtain a diploma. If it were necessary at all to argue this point, case upon case might be brought forward in substantiation. We know very well that the great mass of medical students at the present day are possessed of an excellent preparatory education; and we are not at all disposed to join the cry of many who wail and lament, refusing to be comforted, over the scientific status of the rising generation. On the other hand, in reference to the subject of a classic education, let it be remembered that in the last fifty years we have actually become five hundred or a thousand years farther removed from the silver age, when we consider the moral effect of what has passed within that time. A man to-day lives *more* in one year than formerly in five. There is no room for much classics in these days. The iron horse has taken the lustre off the famous wooden horse of Troy, and the telegraph wires speak with voice as loud and eloquent as once Cicero or Demosthenes, of the progress of mankind. The indifference towards classic studies, so obvious in our time, has its natural causes. The human mind is limited. To a certain extent the law in physics, that two things cannot occupy the same place at the same time, applies to it. Natural sciences have grown up and taken the lead. Something must make room for them. As the individual

who devotes all his time and his energy to the study of chemistry, for instance, cannot be expected to become a critical classical scholar, or if he has been will soon lose much of his former knowledge; so with the mind of mankind. We might as well lament over the disappearance of the good old traveling coach, as over the gradual downfall and decay of classic studies.

With these remarks, on the one hand knowing that the great mass of the medical students of this day have enjoyed and profited by the opportunities of a good preliminary education, and on the other hand considering the downfall of the old fashioned classic education as natural, and as an evident sign of progress in other directions, we cannot be accused of laying too severe a critical measure upon the present system of medical education. Yet we are neither writing a panegyric on the former nor the epitaph of the latter, but a review of facts; and the lamentable truth cannot be denied, that the present system of medical education has caused, or, if the term is preferred, has allowed, the admission into our profession of men whose ignorance has cast a dark shadow upon themselves and their brethren, and who, lacking every higher and nobler ambition, have degraded the most liberal of the liberal professions down to a mercenary trade.

The radical change to which we have alluded is, that the indiscriminate admission of young men into the ranks of the profession as students be restricted. Sooner or later, this reform must be carried out. There is, we believe, not *one literary* college in the land, which does not require a preliminary examination. Yet any one who can write his name and the name of his preceptor, though ignorant to the last degree, may enter the temple of our most noble science. It is time that guards should be placed at its very threshold.

But a few words need we say about the manner of restriction. The discriminating power should be vested in the State and District Societies. No student should be allowed to matriculate who cannot present certificates of recommendation from the Board of Censors of the District in which he lives. Where such

societies do not exist, special censors appointed by the State Society of the respective States in which colleges are located, should be ready at given times to examine candidates for admission. The requirements necessary for admission should be decided by the American Medical Association, and the Boards of Examiners be guided thereby. A distinction between graduates of literary institutions and others should not be made in these examinations for admission. The diploma from a literary college is frequently no more a sign that its holder really possesses literary or classic attainments, than a medical diploma shows that its holder really deserved it. Let there be strict equality—every one on his own merits. Again, without saying anything against a so-called *classic* education, we would urge the study of *living* languages as important in the preparatory curriculum. If it is a profitable pleasure to crack a joke with Horace, to listen to the powerful invective of Cicero, or to be moved by the sweet pathos of Homeric songs, the study of German and French is not the less profitable and pleasurable to the medical student and the physician. It is a fine thing to read Hippocrates and Celsus in the original, yet it is as pleasing, perhaps more so, to do the same with Virchow and Bernard.

Lastly. A proper restriction, an examination to determine the intellectual and moral capacity of the candidate, how much expectation disappointed and hope blasted would it not present! Alas, how many young men have thoughtlessly entered the open portals of our profession, when but too late they found that they were never made to be physicians! Their money spent, their friends disappointed, their self-reliance gone and hopes blown to the winds, they had the alternative of dragging on a weary, weary existence, practicing mechanically an art which they had not mastered and did not like, cursing it and their fate, or to leave it, regretting the time they had lost in it. Their name is legion. Would they not have blessed their fate in days long after, had some guardsmen stood at those portals and forbidden their entrance!

#### COMPENSATION FOR POST MORTEM EXAMINATIONS.

We call the attention of our readers, especially those in Newark, N. J., to the letter of Dr. Atlee, published in another column of the *REPORTER*. The case to which our esteemed correspondent alludes, is one of importance, as it establishes by *precedent* (the great sheet-anchor of our brethren of the bar) the true legal aspect of the case.

The following is the decision of Judge Lewis, to which Dr. Atlee refers.

##### Opinion of the Hon. Judge Lewis:

"This is an action to recover compensation for professional services rendered by the plaintiff, as a physician, at the request of the coroner, upon a *post-mortem* examination. It is the duty of the coroner, in cases of sudden death, or where any are slain, to hold an inquest, *super visum corporis*, to inquire into the cause of death, 'by the mark on the neck, or by a mark on any of the limbs, or by any *hurt found on the body*.' 4 Ed. 1. The statute of Edward the IV, regulating the duties of the coroner, in this respect, is in affirmance of the common law, one of the great advantages of which is, its constant adaptation to the progress of business, the advanced state of the sciences, and the habits of the people. In this enlightened age, a coroner who would undertake to consign to the grave, the body over which he had held an inquest, without availing himself of the lights which the medical science has placed at his disposal, would be regarded as unfit for the office, and unworthy the age in which he lives. A thorough examination, aided by the highest professional skill within reach, is absolutely necessary in the administration of justice. Without such examination, groundless suspicions may be entertained, and prosecutions commenced, at once cruel to the objects of them, expensive to the county, and wasteful of the time and talents of all persons engaged in them. But this is not all. Without a thorough examination of the body, and a complete demonstration, from the evidence thus in the power of the commonwealth, that the death was caused by violence, the guilty agent cannot be convicted. When, from ignorance in the examination of the body, the cause of death is left in doubt, the accused will, in general, escape the just punishment due to his crime; because in all cases of doubt, he has a right, under the law, to demand an acquittal. Thus, the guilty are again let loose upon society, and the public is deprived of that protection which the laws were intended to provide. There can be no doubt of the duty of the coroner to require such aid as was given in this case; and it seems equally clear that his powers are commensurate with his duties.

It is true that medical witnesses may be called upon to give evidence of any facts within their knowledge, and also of the opinions which their researches and experience have enabled them to form on questions of science pertinent to the case. But they cannot be compelled to devote their time and talents, without compensation, to the unpleasant

duties of a *post-mortem* examination—to assume the responsibilities of an investigation, upon which the life of a fellow being may depend—and to encounter the painful ordeal of a thorough cross-examination, generally conducted by gentlemen of science and courtesy, but sometimes by individuals not remarkable for either.

Even where nothing further is asked of the medical practitioner than his attendance as a witness, his case is one of peculiar hardship. His business is of a character which requires the employment of his own skill and judgment. It is in these alone that his patients confide, and no deputy or substitute can supply these qualities. To him the ordinary fee of a witness is a very insufficient compensation. "The same policy which exempts medical practitioners from attendance on other public duties may suggest the propriety of allowing them some adequate indemnity when their assistance becomes indispensable; and this not only for their private and immediate advantage, but ultimately for the public benefit; for, if properly remunerated for their attendance, practitioners of a superior class would not be unwilling to devote some portion of their time to the assistance of public justice: whereas, under the existing system, it is notorious that all who can will avoid the burden; and the duty, therefore, devolves on those who are least competent to its execution; this evil is particularly apparent on coroners' inquests, where the opinion of a shop boy has often been allowed to determine a question *in limine*, which properly investigated, might have required the first science to obtain a satisfactory result." 1 Par. & Foul. Med. Jur. 167.

Attendance is more burdensome on a professional man than on others, so also it is more frequently called for. Other men are only called to testify to facts within their knowledge. The professional man is called upon for his *opinions*. Those, therefore, who stand highest in public estimation, and whose time is most valuable to themselves and their patients, are the most frequently called to discharge these unprofitable duties. A consideration of these circumstances, has doubtless led to the practice in England of allowing medical witnesses more than the usual witness fees, as a compensation for the loss of time. *Willis v. Peckham*, 4 Moore; *Severn v. Olive*, Mich. Term, 1821, C. B. Two guineas per day is the usual allowance to medical witnesses in England, "but no allowance is made for the time spent in making chemical experiments, for the purpose of perfecting themselves in the science which they profess, because it is alleged that they ought not to acquire their knowledge at the expense of the parties." Ap. to 3 Par. & Forb. p. 203; *Severn v. Olive*. How far they should be allowed for the time spent in the application of that knowledge to the particular case under investigation is a question entirely different. The principle by which they are compensated for their loss of time as witnesses, and considerations of policy and justice, sanction an allowance for the loss of time spent in a *post mortem* examination.

This expense is a necessary incident to the administration of justice for the county. The coroner of the county is charged with the duty of holding the inquest, and has, as an incident to his authority in

this respect, the power to summon such aid as the purposes of justice may require. In doing so, he acts not in his individual capacity, but in his official character as the officer of the county. "The power to order, implies the promise to pay." *Commissioners v. Hall*, 7 Watts, 291. It is upon this principle that the county is liable for the contingent expenses of the court—for the fire-wood, candles, &c. consumed in the court house—for the expenses of keeping a jury together at a hotel when ordered by the court, as is usual in capital cases—as for the expenses of medical services ordered by the court for a juror suddenly ill. 7 Watts, 291.

The plaintiff is, therefore, entitled to recover in this action, such a sum as the jury shall deem a reasonable compensation for his services.

ELLIS LEWIS.

Nov. 28th, 1844.

The jury rendered a verdict in favor of the plaintiff for the whole amount of his claim.

Now, after the great international prize fight has been decided, and, instead of one, the admiring world can boast of two champions bearing her name, it may not be unbecoming to say a few words on another kind of prize fighting, which seems to have escaped entirely the attention of our critics.

Literary prize fighting is one of the growing and evil passions of the day. Its devotees are men of high standing and low; of honor and meanness. Gentlemen and rowdies alike enter its ring. In literary prize fighting, however, strongly contrasting in this respect with the prize ring, no code of battle, no rules of fairness, seem to be acknowledged. Such a thing as a foul blow is not known in the literary prize fighting of our day. Lies, calumnies, misrepresentations, form the weapons, and he who handles them best, and quickest, will be cheered as the great champion. The literary prize fighters are found all over the continent; they outnumber those of the fistian sign by thousands. They are often disgusting cowards, never attacking an enemy except in the rear, and in large gangs.

It is curious, that, while there is but one cry of abhorrence toward the late brutal exhibition of the prize ring, there is utter silence in respect to the literary prize fighting, often a thousand times more disgusting, which is constantly going on before our eyes in general, scientific, and even medical literature. We can explain it in no other way than by

supposing that the refinement of our age and civilization has shifted the brutality, in the nature of man, from his muscles to his nerves; tongue and pen had taken the place of fist and lance. Yet with these he will fight as hard as the knights five hundred years since at their tournaments. "It is the *form* that changes, not the substance."

### Correspondence.

To the Editors of the Medical and Surgical Reporter.

GENTLEMEN:—In the Reporter of June 30th, 1860, you refer to the circumstance of a Coroner's inquest, in Essex County, New Jersey, where Drs. Cross and Grant very properly declined their services in making a post-mortem examination. Had these gentlemen, however, undertaken the work they could have recovered by law a proper compensation, notwithstanding the parsimonious action of the Board of Freeholders. The legal principle on this question was decided by the Hon. Judge Ellis Lewis, sixteen years ago in Lancaster County. Having made an autopsy October, 1843, at the request of the Coroner, I presented a reasonable bill to the commissioners. In their desire to curtail expenses they ordered a less amount to be paid, but as this was not an adequate remuneration for the services rendered, I requested a reconsideration. This was granted, but without a different result. The amount they offered was given merely as a favor, as the law, in their opinion, did not authorize them to pay anything. In order to test the rights of the profession, I instituted suit against the Board for the whole amount of the claim. The jury gave it in my favor. The opinion of Judge Lewis was clear and pointed, and may be read in the American Journal of Medical Sciences, Volume XII, p. 538. I believe this is the first time this principle has been judicially settled.

Immediately on the refusal of the Commissioners to pay a proper fee, I secured the signatures of the physicians of Lancaster to a paper agreeing to make no post mortem examination for the Coroner under a fee of twenty dollars to each physician. This, I believe, has been maintained in Lancaster County ever since, and as an autopsy sometimes requires the presence of more than one physician, a single examination has cost the county as high as forty and sixty dollars.

With the view of encouraging the Essex County Physicians to maintain their position, and also of calling attention to the legal decision of this question, I communicate these facts.

Very respectfully, yours,

WASHINGTON L. ATLEE,

Philad'a, July 2, 1860.

1408 Arch Street.

### News and Miscellany.

**Vaccine Regulations.**—The new ordinance in relation to vaccine physicians, recently adopted in this city, introduces some useful changes into that part of our sanitary system. By it, the Board of Health, instead of Councils, are to appoint such physicians, one for each ward, and to supervise them also, a duty at present discharged by nobody. The physicians themselves are to hold their office for one year, unless removed by the Board of Health; are to vaccinate every person applying, and to keep on hand and furnish grain to all physicians who wish it, a supply of vaccine matter. Their salary, instead of a fixed sum, is to be fifty cents for each case successfully vaccinated, but is not to exceed fifteen dollars per quarter. The ordinance contains many minor provisions in relation to the mode of performing their duties, the reports to be made to the Board of Health, a summary of which is to be published, and the appointment and duties of the collectors of vaccine cases.

**Philadelphia Hospital.**—At the annual meeting of the Medical Board of this institution, Dr. S. D. Gross was elected President, and Dr. J. L. Ludlow, Secretary.

**Board of Health of Philadelphia.**—Dr. Paul B. Goddard has been elected President, and Dr. James McCrea, Secretary.

**Insects Insensible to Pain.**—A work has just been issued on British insects, in which the author expresses the belief that insects do not feel pain. He states that when insects are mutilated in such a manner as would cause the death of vertebrate animals, they afterwards perform all the functions of life—eating, drinking, &c.—with the evident power of enjoyment.

### Answers to Correspondents.

COMMUNICATIONS RECEIVED.—*Delaware*, Dr. James A. Hopkins.—*Mississippi*, Dr. Rob. E. Richardson, [with encl.]—*New Jersey*, Dr. J. S. Cohen, (2).—*Pennsylvania*, Dr. G. J. Gross, Dr. Daniel Holmes, [with encl.]—*Tennessee*, Dr. W. D. Hill, [with encl.]—*Tennessee*, Dr. F. F. Porter, [with encl.]

**Office Payments.**—Dr. M. K. Gleason, Mr. J. H. Getwell, By Mr. Hulme: Drs. G. T. Dare, J. H. Musser, A. M. Miller, Jas. H. Lafvre, Dr. B. Shirr, J. M. Groff, John K. Hartz, Isaac Wilson, John W. Luther, J. B. Stearns, C. Weidner, G. B. Hartman, Benj. S. Kendig, A. W. Eober, John Ream, G. J. Rowan, J. M. Dunlap, A. Sheller, Sebastian Keller, P. M. Knight, Paul Mellinger.



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## MEDICAL AND SURGICAL REPORTER.

WHOLE SERIES,  
NO. 195. }

PHILADELPHIA, JULY 14, 1860.

{ NEW SERIES  
VOL. IV. NO. 15.

### ORIGINAL DEPARTMENT.

#### Communications.

**Spontaneous Fracture of the Os Femoris  
and the Pelvis from Cancerous Deposit—  
Scirrhus of the Mammary Gland—Death  
—Autopsy.**

By J. A. Cross, M. D.,

Of Newark, N. J.

Mrs. Emma Rodgers, aged 48, English,  
presented herself at the Newark Dispensary,  
when that institution was first organized, about  
the first January, 1858.

Her appearance was somewhat exsanguinat-  
ed, her muscular development but little below  
that of females of the nervo-sanguineous tem-  
perament, her complexion clear, tongue clean,  
appetite usually good; she complained much  
of what she termed rheumatism of her lower  
extremities, and especially her hips; of fre-  
quent diarrhoeas, and that her menses appeared  
at shorter intervals, and were more profuse  
than natural, and that she was much troubled  
with leucorrhœa. Her general symptoms were  
those of a shattered nervous system. She was  
invariably better on the day of her visit to the  
Dispensary, than she had been during the in-  
terval between her visits; was always in great  
fear that one or the other complaint would  
recur before her next visit, and had great de-  
sire for medicine.

There was scirrhus of the right mamma,  
nodulated, occupying about one-third of the  
gland. It was first discovered about eleven  
years previous, and had been treated by dif-  
ferent physicians, who had repeatedly recom-  
mended excision, but the patient declined an  
operation.

Her symptoms were undoubtedly the consti-  
tutional effects of the scirrhus, and she was  
accordingly treated with tonics and placebos.

She continued much the same till about  
the middle of May, when the difficulty  
about her limbs and hips increased, and  
finally rendered her unable to walk to the  
Dispensary a few weeks later. She was  
then lost sight of, till sometime the follow-  
ing November, when, by changing her re-  
sidence, she became a district patient of  
mine. She was much prostrated; the disease  
was slowly consuming her constitution; her  
nights were sleepless, affording but little rest.  
The pain and stiffness of her hips and limbs  
daily increased, till she was almost unable to  
get about the house. Thus her case continued  
till about the middle of January, 1859, when,  
while attempting to cross the floor, her right  
leg "gave way," (as she expressed it,) and  
she fell to the floor. She was positive she did  
not stumble or trip, that she knew no cause  
for falling, but that her limb snapped  
and "gave way," and she fell. I am thus  
particular, to show that it was a spontaneous  
fracture; that the fracture was the cause of  
the fall, and not the fall the cause of the  
fracture.

Accompanied by Dr. Milton Baldwin I  
called to dress the fracture; the limb was con-  
torted from muscular irritation, and fractured  
at the upper third of the femur. The right  
ilium was much lower than its fellow of the  
opposite side, with much fullness in the right  
iliac region, while the left was quite depressed,  
as is usual in persons of so slight muscular  
and adipose development. It was further dis-  
covered, that, by placing one hand upon the os  
pubis, and the other upon the bony structure

at its articulation with the sacrum, there was lateral motion of the bone between the points where force was applied; also force applied to the tuberosity of the ischium gave motion of the os ischii. Hence fracture of the right pelvis was diagnosed, or in plainer terms it was pronounced "shivered." The bony structure was believed to be so diseased with cancer, that it had fractured like a piece of glass, when the hip struck the floor at the time of the fall. For the comfort of the patient the limb was put loosely upon a straight splint, to prevent muscular irritation and the consequent contortions of the limb, and the rest left to nature.

The general health of the patient continued about the same as before the accident, after the few first days of irritative fever. She was now favored with a voracious appetite, which was indulged to its full extent with the most nutritious food, and I will here take the occasion to state the effect of variation in the nature of diet; her usual food was beef and mutton, with vegetables; change to fish, if but for a day, and she appeared feeble; limiting her to vegetables she would show depression of strength and the powers of life to such a degree, that the nurse remarked we could soon get rid of our charge by withholding animal food.

The splint was removed from the limb after two or three weeks, with no unpleasant effect; at the end of about twelve weeks there was union of the femur. The limb was so thin that the provisional calus could be easily examined and its changes watched. At this time absorption of lymph appeared almost completed, and the small tumor at the fracture seemed bony. She could now move her limb about in bed, by placing the foot of the sound limb under that of the injured one, and thus place it where she desired.

The scirrhus of the breast seemed now to be subjected to serious changes. At times it would grow quite dark and painful; the surface of the nodules would look much inflamed, as though they were about to ulcerate; the glands in the axilla enlarged and became painful to the touch; but in a few days these ag-

gravated symptoms would subside, and the patient seemingly not much the worse for them, till, about the first of June she had a grumous discharge from the nipple, and a few weeks later ulceration of two of the nodules, and at that time complained of severe pain in the fractured hip and limb; her appetite became capricious, her digestion disordered, with eructations and frequent diarrhoeas. Thus she continued, tenaciously clinging to life, till the latter part of August. I saw her alive the last time on the 26th. She had an anxious expression of countenance, pulse about one hundred, and had had diorrhœa for two days. I had seen her many times with as marked symptoms of dissolution; but the following day, the 27th, terminated her existence rather suddenly, so much so that the nurse had noted no particular change till she saw her dying.

*Post-mortem Examination* eighteen hours after death, assisted by Drs. Woodhull and E. P. Nichols. The body was slightly warm, with discoloration of the face and abdomen, with grumous frothy discharge at the mouth and nose.

Commenced dissection by making an incision from the crest of the ilium to the middle of the femur, with a lateral incision extending from the pubis, following the crest of the ilium nearly to the spine; amputated the femur below the fracture, divided the pubis at the symphysis, and dissected out what remained of the ilium, ischium, and the head, neck and upper third of the femur. The ilium was so nearly destroyed as to be entirely freed from bony connection with the sacrum. Thus the specimen was obtained without getting into the cavity of the abdomen.

On removing the flesh from the external surface of the ilium, large quantities of a diseased mass gushed through where the bony wall was destroyed, composed of cancerous matter, broken down osseous tissue, and coagula of blood. How extensive may have been this cancerous mass it is impossible to say; for reasons which could not be obviated, it was impossible to follow it up into the cavity of the abdomen to define its limits.

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